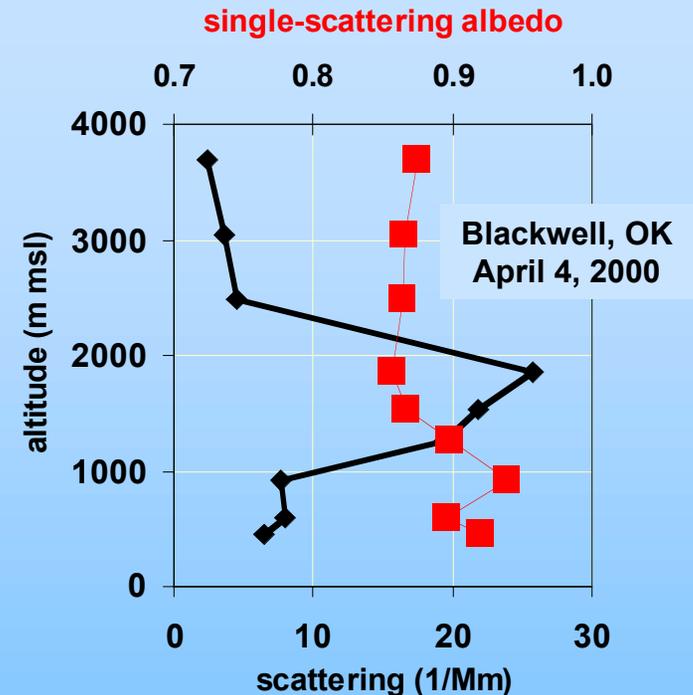


In-Situ Aerosol Profiling

Objective: Obtain a statistically-significant data set of vertical distributions of aerosol properties

Measurements: aerosol scattering and absorption, plus chemical composition, above a similarly instrumented surface site, 2-3 times per week



Sample Inlet



Port view of rack

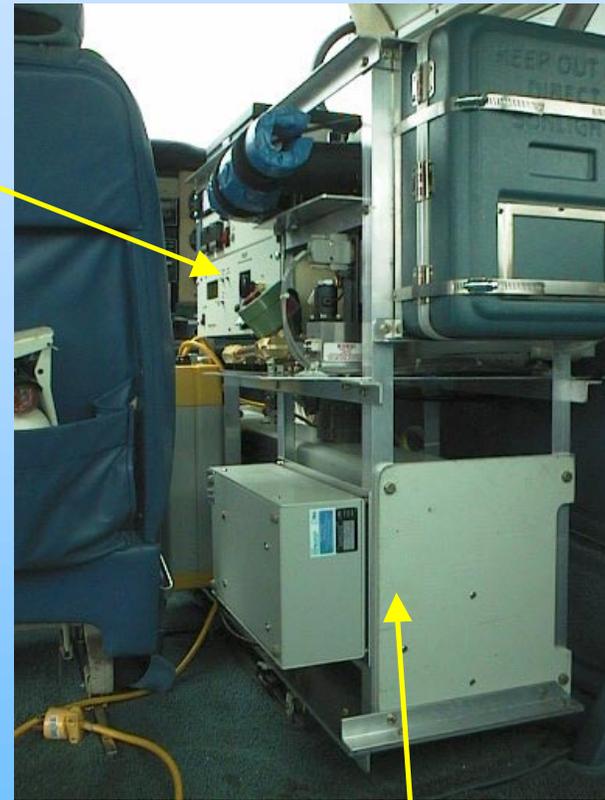
WHY? Because surface-based and remote-sensing measurements don't tell the whole story



Aircraft Instrumentation



PSAP

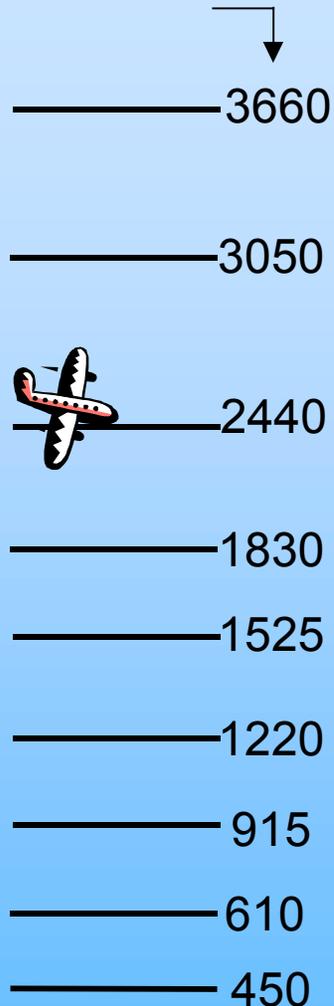


Nephelometer

Aerosol Inlet



Flight level (m)



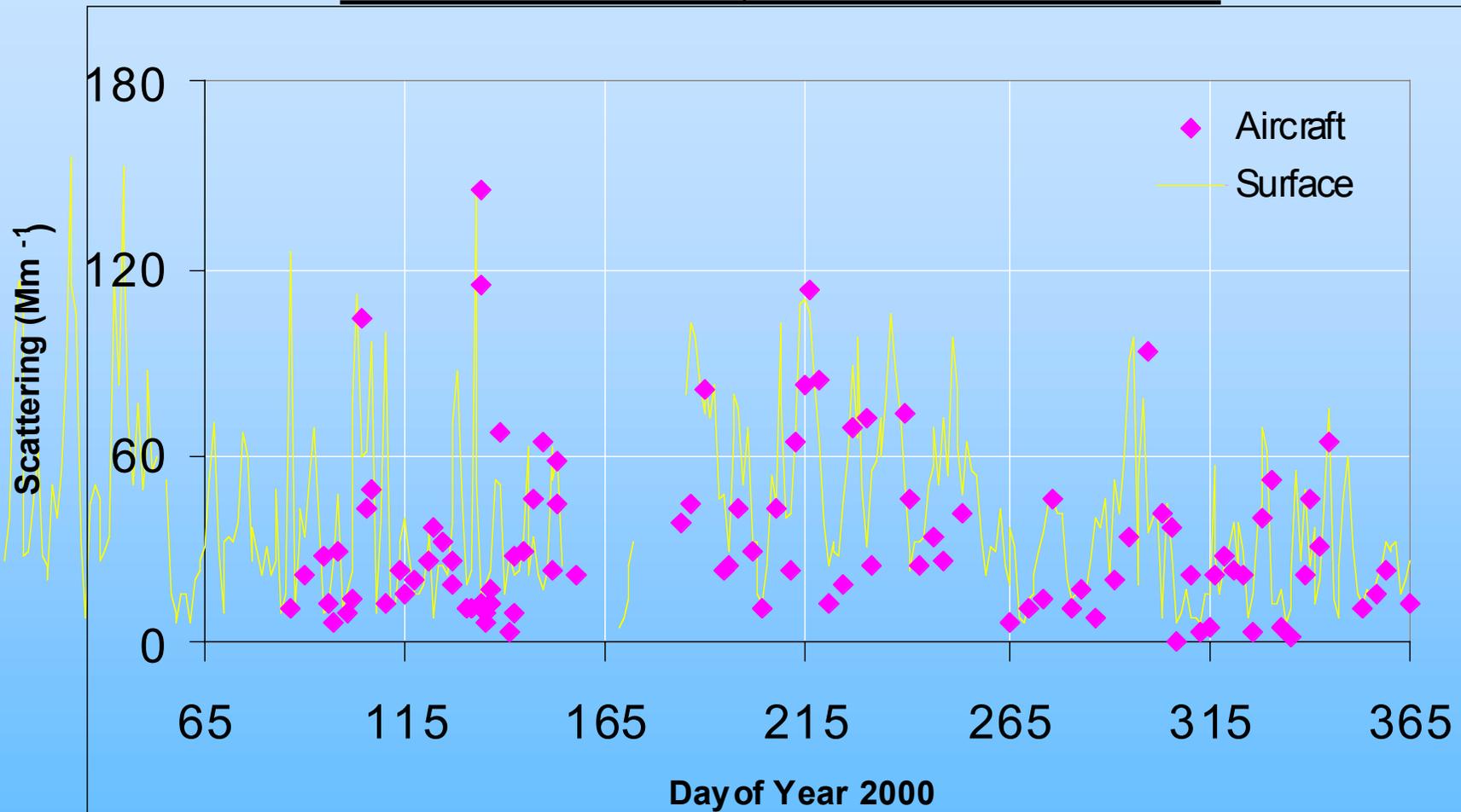
Flight Summary

- 9 level legs flown to obtain each profile
- Levels between 150 – 3400 m agl
- Profile flights flown 2-3 times per week

| | |
|---|--|
| Flight period | March 25, 2000 – March 15, 2001 |
| Total days | 127 flight days/ 355 day period |
| Total flights | 132 flights |
| Average flight time | 2.1 hours |
| Complete profiles (all legs) | 121 |



Time series, SGP and IAP



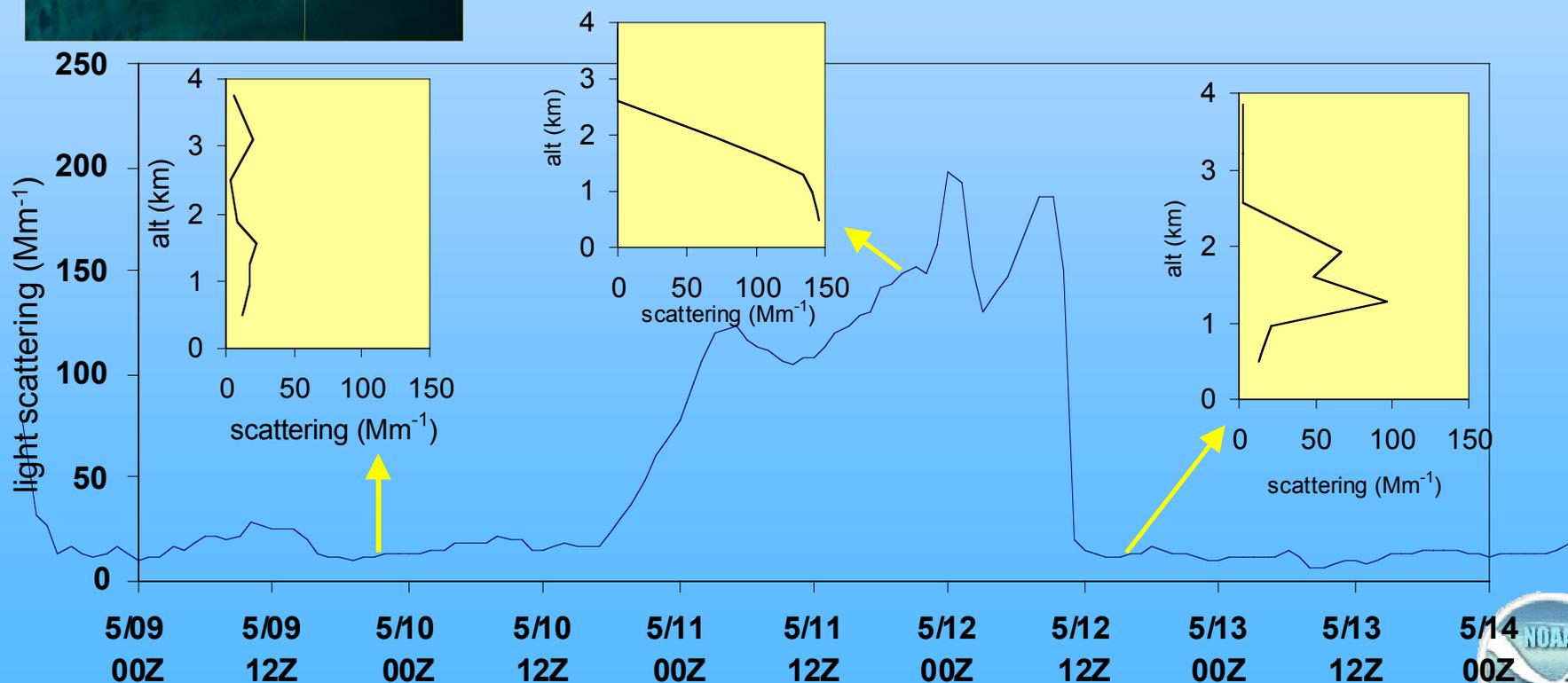
- Daily average for SGP
- Lowest level (150 m agl) for IAP



Long-range transport of smoke aerosol from Los Alamos to Oklahoma, May 2000



Smoke plume reached DOE+NOAA aerosol monitoring site (star) around 16Z on May 10 (blue line). Vertical profiles from aircraft profiling flights (insets) show that the smoke layer aloft persisted after a cold front passed on May 12 at 11Z.



Aerosol Hygroscopic Growth at SGP

